in this case is a non-conductor whilst in the solid state (138); it cannot therefore be that any contact of this sulphuret can produce the current; in that respect it is like the sulphuret of tin (870). But that circumstance does not stop the occurrence of the chemical current; for, as the sulphuret forms a porous instead of a continuous crust, the electrolyte has access to the metal and the action goes on.

891. *Silver.*—This metal, associated with platinum, iron, or other metals inactive in this electrolyte, is strongly positive, and gives a powerful continuous current. Accordingly, if a plate of silver, coated with sulphuret by the simple action of the solution, be examined, it will be found that the crust is brittle and broken, and separates almost spontaneously from the metal. In this respect, therefore, silver and copper are alike, and the action consequently continues in both cases; but they differ in the sulphuret of silver being a non-conductor (170) for these feeble currents, and, in that respect, this metal is analogous to antimony (890).

892. *Cadmium.*—Cadmium with platinum, gold, iron, etc., gives a powerful current in the solution of sulphuret, and the cadmium is positive. On several occasions this current continued for two or three hours or more; and at such times, the cadmium being taken out, washed, and wiped, the sulphuret was found to separate easily in scales on the cloth used.

893. Sometimes the current would soon cease; and then the circle was found not to conduct the thermo current (801). In these cases, also, on examining the cadmium, the coat of sulphuret was strongly adherent, and this was more especially the case when prior to the experiment the cadmium, after having been cleaned, was burnished by a glass rod (869). Hence it appears that the sulphuret of this metal is a non-conductor, and that its contact could not have caused the current (871) in the manner Marianim supposes. All the results it supplies are in perfect harmony with the chemical theory and adverse to contact theory.

894. *Zinc.*—This metal, with platinum, gold, iron, etc., and the solution of sulphuret, produces a very powerful current, and is positive through the solution to the other metal. The current was permanent. Here

another beautiful change in the circumstances of the general experiment occurs. Sulphuret of zinc is a non-conductor of electricity (809), like the sulphurets of tin, cadmium, and antimony; but then it is soluble in the solution of sulphuret of potassium; a property